

ABSTRACT OF THE DISCLOSURE

A dielectric material forming method includes forming a first monolayer and forming a second monolayer on the first monolayer, one of the first and second monolayers comprising tantalum and oxygen and the other of the first and second monolayers comprising oxygen and another element different from tantalum. A dielectric layer can be formed containing the first and second monolayers. The dielectric layer can exhibit a dielectric constant greater than the first monolayer. The another element can include a Group IB to VIIIB element, such as titanium and/or zirconium. The forming of the first and second monolayer can include atomic layer depositing. A dielectric material can include first and second chemisorbed materials, the second material containing oxygen and a Group IB to VIIIB element and the dielectric material exhibiting a dielectric constant greater than the first chemisorbed material. The dielectric material can further exhibit less current leakage than the first material.